DALY Li-ion 20S 72V 40A

DALY Smart BMS Li-ion 20S 72V 40A User Manual

Model: Li-ion 20S 72V 40A
Brand: DALY

Introduction

This manual provides detailed instructions for the DALY Smart BMS Li-ion 20S 72V 40A with Programmable Bluetooth Module. This device is designed for lithium battery protection, offering precise monitoring and control capabilities.
The BMS supports up to 40A continuous discharge and 20A charge current, suitable for various high-current applications. It features a high-quality IC chip for accurate detection of over-charge, over-discharge, and voltage balancing. Key protections include over-discharge, over-current, over-voltage during charging, and low-temperature charging protection (down to -1°C). The integrated Bluetooth module allows for mobile app control and monitoring of battery status and parameter settings.

Your browser does not support the video tag.

Video: Overview of DALY Smart BMS features and basic connection.

Setup and Installation

Proper installation is crucial for the safe and effective operation of your DALY Smart BMS. Please follow these steps carefully.

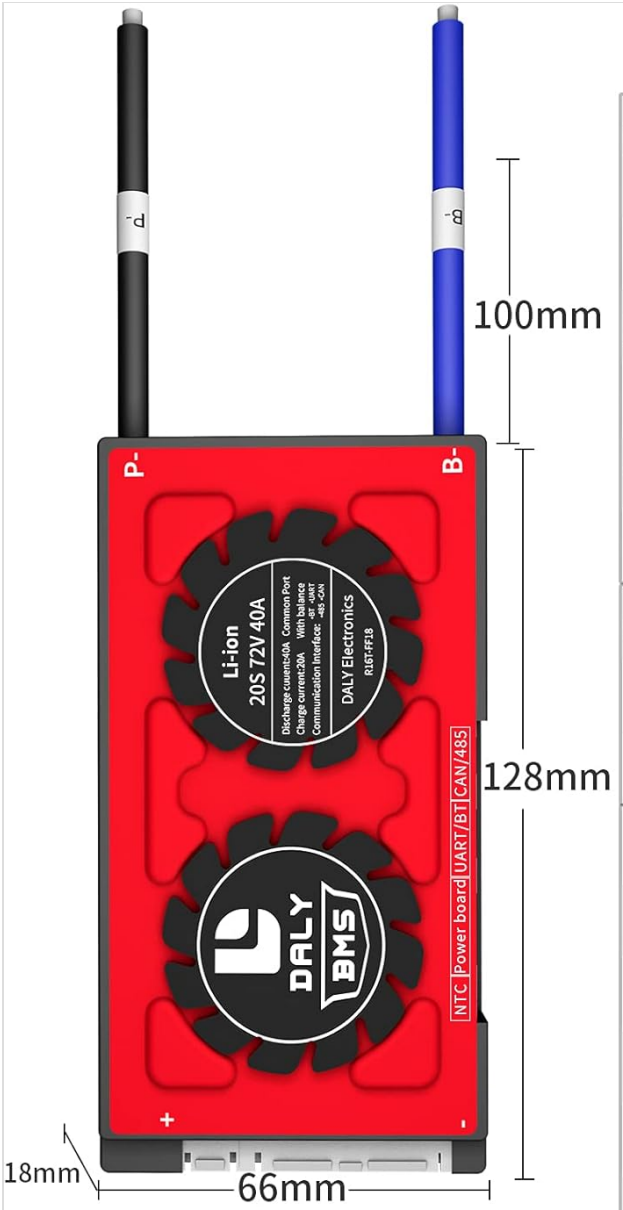
Package Contents

- SMART BMS (1 unit)
- Balance Wires (1 set)
- Bluetooth Module (for Mobile APP IOS & Android) (1 unit)
- UART Cable (for PC screen) (1 unit)
- English Version Wiring Manual (1 unit)

Image: Contents of the DALY Smart BMS package. Ensure all components are present before proceeding.

Wiring Instructions

1. **Preparation:** Ensure all power sources are disconnected from the battery pack. Use appropriate safety gear. Soldering machine (suggested 662°F/350°C), scissors, double-sided tape, tin wire, and a multimeter are recommended tools.
2. **Balance Wires Connection:** Connect the balance wires to the battery cells. It is critical to connect the balance wires to the battery pack *before* connecting the black wire (B-) and red wire (P-) to the BMS.
3. **BMS Connection:** Connect the black wire (B-) from the battery pack to the B- terminal on the BMS. Connect the red wire (P-) from the battery pack to the P- terminal on the BMS.
4. **NTC and Bluetooth Module:** Plug in the NTC (Negative Temperature Coefficient) sensor and the Bluetooth module into their respective ports on the BMS.
5. **Activation:** Press the button on the Bluetooth module to activate the smart BMS.
6. **Initial Check:** Use a multimeter to verify the internal resistance of the BMS. A reading of approximately 0Ω (multimeter deviation 0.1Ω) indicates proper conduction.



Specifications

Product:	Li ion 20S 40A common port with balance
Communications:	UART
Discharge current:	40A
Over-discharge current:	60A±6A (Can be set)
Charge current:	20A (Can be set)
Overcharge current:	60A±6A (Can be set)
Overcharge voltage:	4.25V±0.05V (any string,Can be set)
Over-discharge voltage:	2.7V±0.1V (any string, Can be set)
Charge voltage:	84V (Can be set)
model:	R25T
Size:	128*66 *18mm
Output wire:	16AWG
Balance wires:	24AWG/350mm
Optional:	BT
Weight:	≈337g

Image: Comprehensive wiring diagram illustrating how to connect the BMS to a battery pack, motor, and charger.

Important Safety Note: Please disconnect balance wires white end and BMS connection port before welding black and red balance wires on the battery pack. Keep the BMS red cooling surface side uncovered.

Mobile App and PC Software Setup

1. **Download App:** Download the "Smart BMS" app from the Huawei or Apple App Store.
2. **Connect via Bluetooth:** Open the Smart BMS app and connect to the corresponding Bluetooth device number.
3. **PC Software:** For PC monitoring, connect the UART cable and open the host computer software.

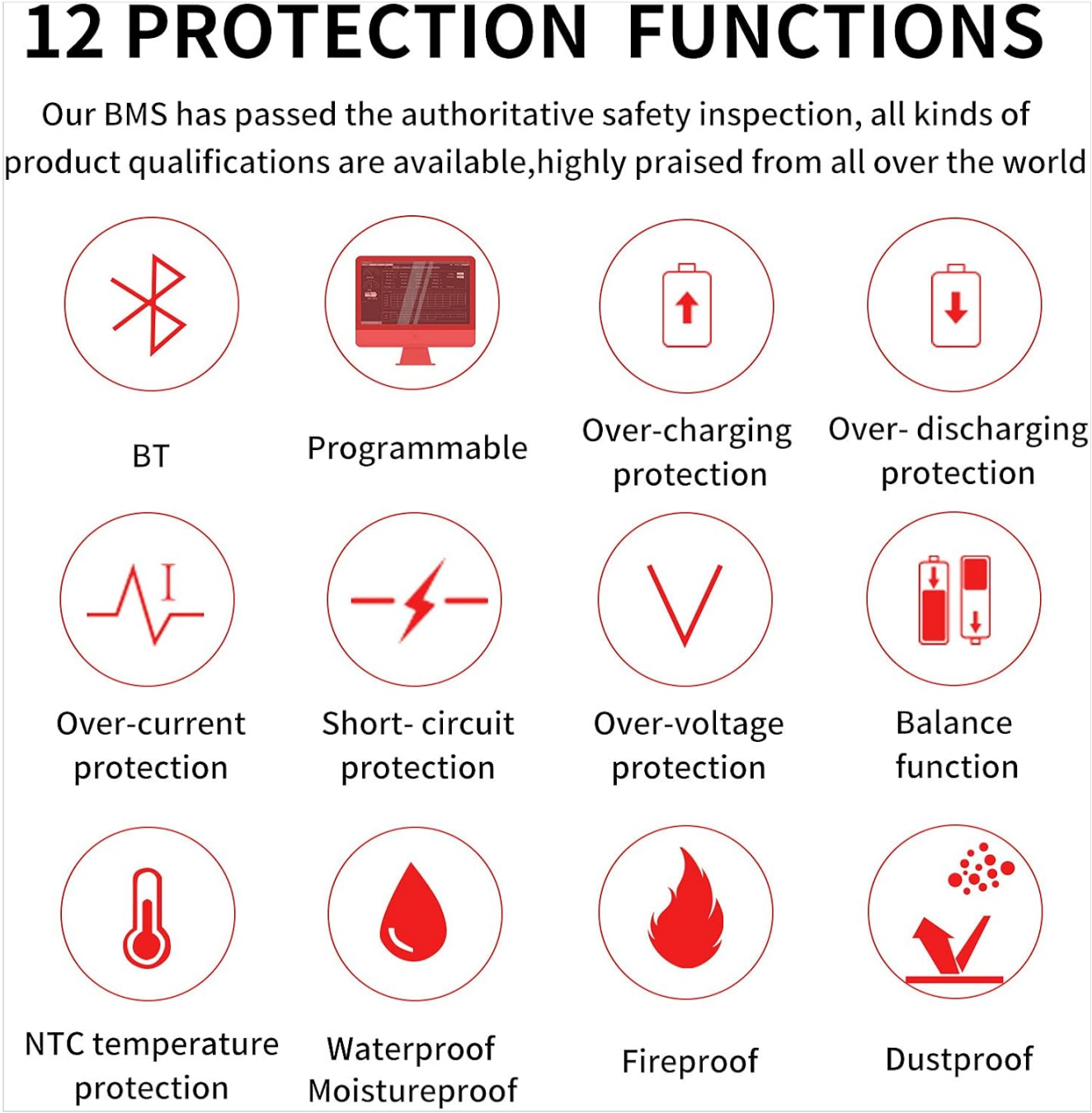


Image: Mobile app interface for monitoring battery parameters via Bluetooth.

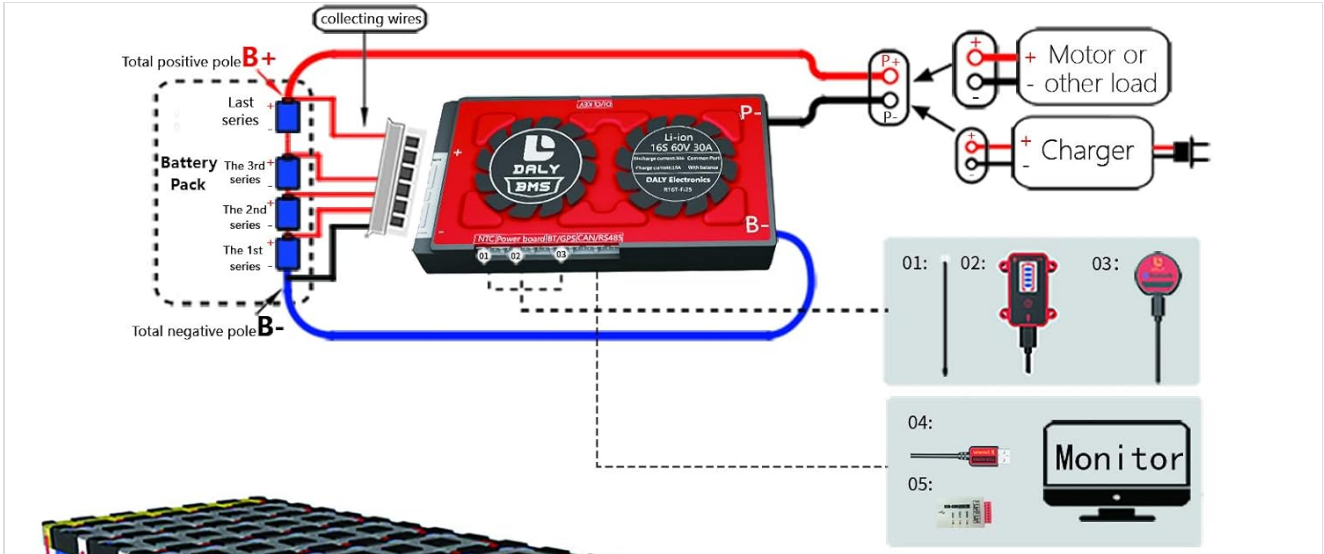
Operation

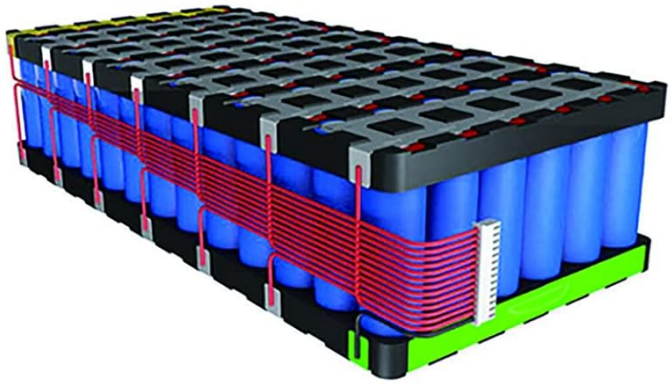
The DALY Smart BMS provides comprehensive monitoring and programmable protection features accessible via the mobile app or PC software.

Monitoring Battery Parameters

Once connected via Bluetooth or UART, you can monitor various real-time battery parameters:

- State of Charge (SOC)
- Current (Charge/Discharge)
- Voltage (Total and individual cell voltages)
- Temperature (NTC sensor readings)
- Warning/Alarm Status





Tools needed: soldering machine(suggest using 662 °F/350°C), scissors, double-sided tape,tin wire, multimeter.

Note: 1, Please **must disconnect** balance wires white end and BMS connection port before welding black and red balance wires on battery pack. 2, Please keep BMS red cooling surface side uncovered and use DALY matching balance wires(regular length 450 mm / 17.72 inch).

After confiming that the balance wires are welded correctly and installed the accessories (such as: UART/Bluetooth/ RS485/ CAN on BMS),connect balance wires and BMS connection port Pls refer to daly website link smart bms Tutorial Video https://www.dalyelec.cn/newsshow.php?cid=25&id=78&lang=1 including:

1. Daly Smart BMS Touch screen Connection Tutorial
2. Daly Smart BMS SOC light board Connection Tutorial
3. Daly Smart BMS PC screen Connection Tutorial
4. Daly Smart BMS CANBUS Connection Tutorial
5. Daly Smart BMS Bluetooth APP Connection Tutorial
6 Daly Smart BMS UART、RS485 Connection Tutorial

Two methods①: press activation button on the battery board ②: by charging to activate BMS for the first use.
The serial number of BMS and the protection parameters(Li-ion,LiFePO4) have default values at the factory, but the capacity of the battery pack needs to be set according to the actual capacity AH of the battery pack.If the capacity AH is not set correctly, The percentage of remaining power will be inaccurate.Other parameters can also be set to your needs.
Initial password of smart board APP to change parameters is: 123456.

Image: Mobile app interface showing detailed battery status and parameters.

Programmable Protection Functions

The BMS offers several programmable protection features to safeguard your battery pack:

- **Over-charge Protection:** Stops charging when battery voltage reaches a set limit.
- **Over-discharge Protection:** Stops discharging when battery voltage drops below a set limit.
- **Over-current Protection:** Stops charging or discharging if current exceeds programmed limits.
- **Temperature Protection:** Stops all current if battery temperature reaches critical limits (low temperature charging protection at -1°C).
- **Short-circuit Protection:** Prevents damage from short circuits.
- **Voltage Balancing:** Actively balances cell voltages for optimal battery health.

Initial Setup of Battery Capacity:

For the first power-on, the battery capacity must be set to the actual capacity of your battery pack. The initial password for parameter changes is **123456**. Failure to set the correct capacity will result in inaccurate State of Charge (SOC) calculations.

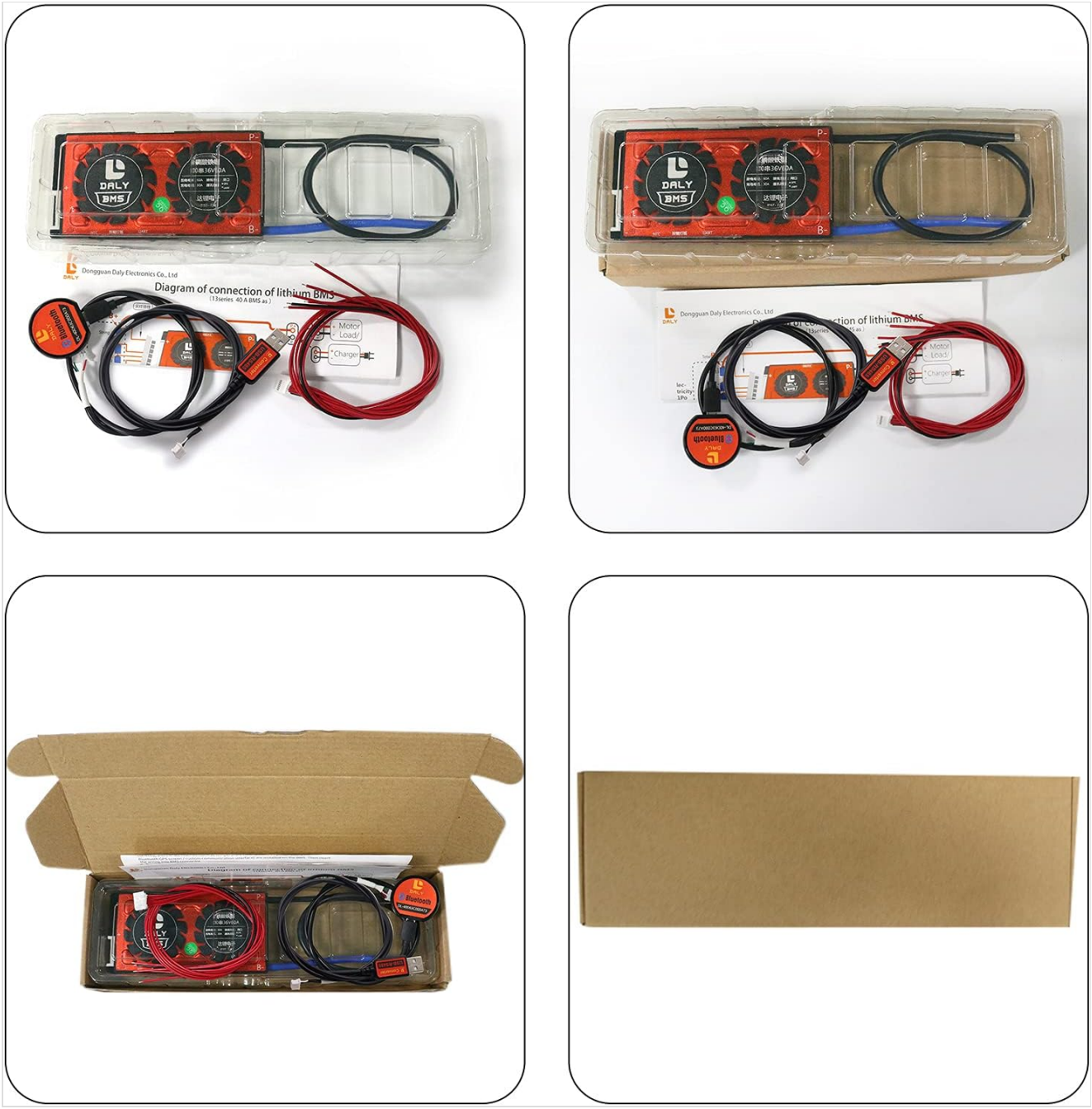


Image: Visual representation of the 12 protection functions integrated into the DALY Smart BMS.

Maintenance

To ensure the longevity and optimal performance of your DALY Smart BMS and battery pack, consider the following maintenance guidelines:

- **Regular Monitoring:** Periodically check battery parameters via the mobile app or PC software to identify any anomalies early.
- **Temperature Management:** Ensure the BMS and battery pack operate within their specified temperature ranges. The BMS includes low-temperature charging protection at -1°C to prevent damage. Avoid operating or charging the battery below this temperature.
- **Firmware Updates:** Check the manufacturer's website or app for any available firmware updates to improve performance and address potential issues.
- **Cleanliness:** Keep the BMS free from dust and moisture. While the product description mentions "Waterproof" and "Dustproof" as features, maintaining a clean environment is always recommended.
- **Connection Integrity:** Periodically inspect all wiring connections for tightness and corrosion. Loose

connections can lead to poor performance or safety hazards.

Troubleshooting

This section addresses common issues you might encounter with your DALY Smart BMS.

Common Issues and Solutions

Problem	Possible Cause	Solution
BMS not activating / No power	Incorrect wiring; Bluetooth module not plugged in or activated; Battery voltage too low.	Verify all wiring connections according to the diagram. Ensure the Bluetooth module is securely plugged in and its button is pressed to activate the BMS. Check battery voltage.
Bluetooth connection issues	Bluetooth module not activated; App not installed correctly; Interference; Out of range.	Ensure the Bluetooth module is activated. Reinstall the "Smart BMS" app. Move closer to the BMS. Check for other Bluetooth devices causing interference.
Inaccurate SOC (State of Charge) reading	Incorrect battery capacity set in the app.	Access "Parameter Settings" in the app (password: 123456) and set the "rated capacity" to the actual capacity of your battery pack.
Over-charge/Over-discharge protection triggering prematurely	Protection parameters set too conservatively; Cell imbalance.	Review and adjust protection parameters in the app if necessary (consult battery manufacturer specifications). Allow the BMS to balance cells.
BMS heating excessively	High current draw; Inadequate ventilation; Faulty component.	Ensure the BMS is not operating beyond its rated current. Provide adequate airflow around the BMS. If heating persists, contact support.

Specifications

Key technical specifications for the DALY Smart BMS Li-ion 20S 72V 40A.

Feature	Detail
Product Type	Li-ion 20S 40A Common Port with Balance
Discharge Current	40A (Continuous)
Charge Current	20A
Over-discharge Voltage	2.7V ± 0.1V (per string)
Overcharge Voltage	4.25V ± 0.05V (per string)
Charge Voltage	84V
Communications	UART, Bluetooth (Optional: CAN/RS485)
Product Dimensions	5.04 x 2.6 x 0.71 inches (128 x 66 x 18 mm)
Item Weight	12.8 ounces (~337g)

Feature	Detail

Output Wire	16AWG
Balance Wires	24AWG/350mm
Special Feature	Mobile App Control
Connectivity Technology	Bluetooth
Power Source	Battery Powered

Image: Diagram showing the physical dimensions and key electrical specifications of the BMS.

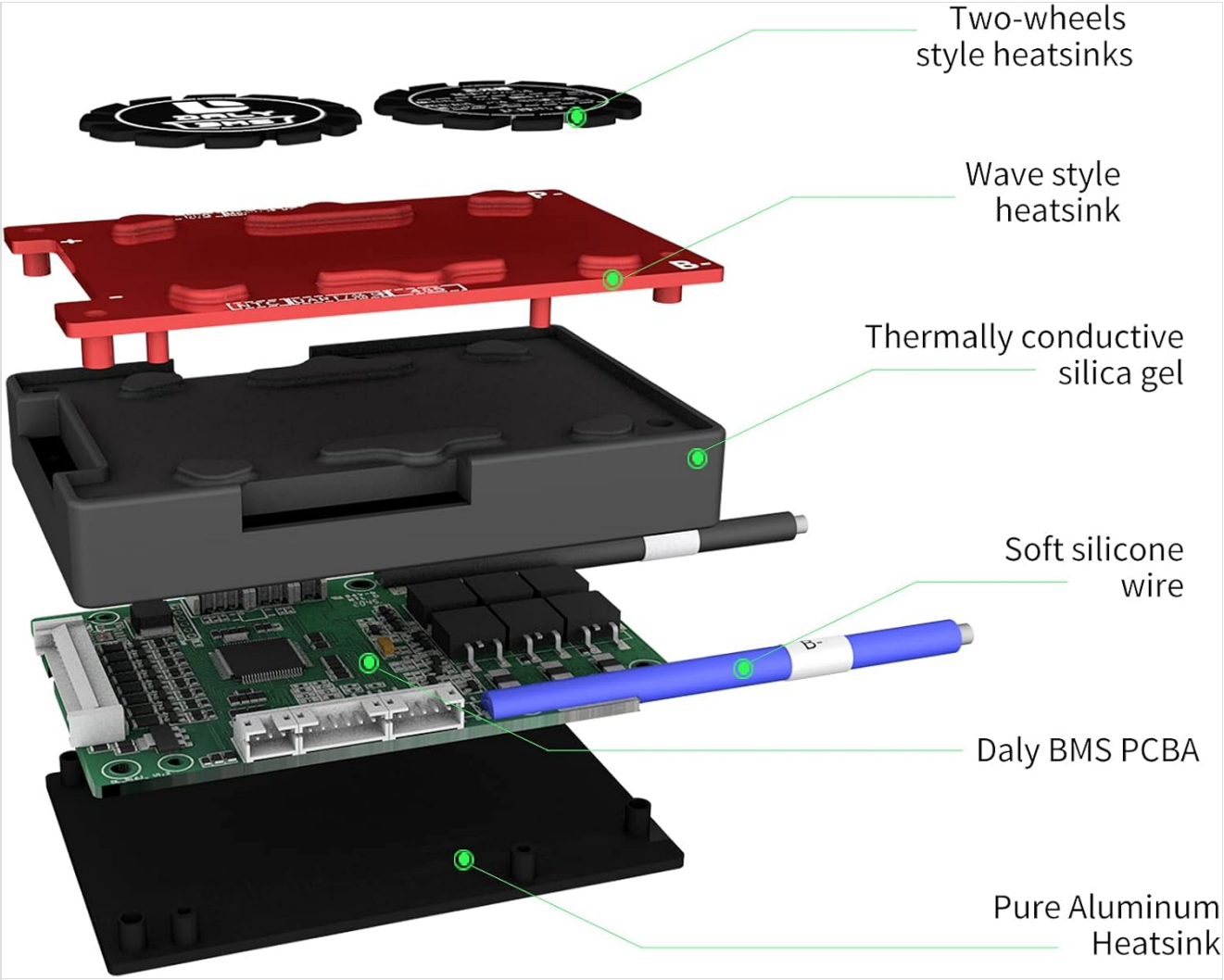


Image: Exploded view of the BMS, highlighting its internal construction and components.

Warranty Information

Specific warranty details for the DALY Smart BMS Li-ion 20S 72V 40A are not provided in the available product data. For warranty terms and conditions, please refer to the manufacturer's official website or contact DALY customer support directly.

Support and Contact Information

For further assistance, technical support, or inquiries regarding your DALY Smart BMS, please use the following resources:

- **Manufacturer:** DALY
- **Online Store:** Visit the official DALY Store on Amazon for product information and updates.
- **Wiring Manuals and Tutorials:** Additional wiring manuals and tutorial videos may be available on the DALY website.

Related Documents - Li-ion 20S 72V 40A

	Daly Smart BMS 8-16S 100-200A Product Specification Approval and Manual Detailed product specification and user manual for the Daly Smart BMS 8-16S 100-200A, covering technical parameters, protection features, LED indicators, communication protocols, and installation instructions.
	DALY Y Series BMS Technical Specifications and Wiring Guide Detailed technical specifications, wiring diagrams, and interface descriptions for DALY Y Series Battery Management Systems (BMS), including models YH, YK, and YM. Covers cell counts from 4S to 24S and current ratings up to 200A, with information on the Smart BMS mobile application.

东莞市达锂电子有限公司
DALY Dongguan DALY Electronics Co., Ltd.

Y系列保护板说明书

一、产品简介

随着物联网技术的飞速发展和智能设备的广泛应用，越来越多的设备需要更高效、更便捷的通信和控制方式，同时新国标对动力设备的智能化和兼容性也提出了更高要求。在这种背景下，采用蓝牙主控实现兼串及一线通功能的解决方案逐渐成为行业的热门选择。

产品			
产品型号	YH	YK	YM
产品尺寸	101*65.5*14.2mm	130*65.5*14.2mm	180*92.4*17.2mm
串数范围	4-8S 7-17S 7-24S		
持续电流	30A/40A/60A	80A/100A/120A	150A/200A

二、使用指引

1、焊接保护板

(1)焊接采样排线：

从细黑线连接电池B-（总负极）开始，第2根线连接第1串电池正极， 后面依次连接每一串电池的正极；最后将B+ 线也焊接在最后一串（总正极）上（请参考说明书接线示意图）。

*注：焊接采样线时不可插着保护板，请根据电池实际串数进行焊接，多出的采样线无需焊接（多出的采样线请做好绝缘处理）。

(2)检测电压：

使用万能表或线序检测设备测量排线的针孔每串电压是否在正常范围内，如不正常请检查接线是否有错接、虚焊、假焊、漏焊等情况。

(3)焊接输出线：

将B-连接线（蓝色粗线）、P-连接线（黑色粗线）用螺丝锁至保护板对应的B-、P-螺母上，建议扭矩为10N·m(牛米)；并把B-线焊接电池总负极。

*注：焊接采样线时不可插着保护板，请根据电池实际串数进行焊接，多出的采样线无需焊接（多出的采样线请做好绝缘处理）。

(4)接入保护板配件：

如遥控、电量板、GPS、显示屏等，再把采样线插入保护板自动激活。

2、蓝牙APP下载及连接

(1)下载蓝牙APP

①通过扫描保护板上的二维码下载；
②应用商店搜索"Smart BMS"；
③登录达锂官网
(https://www.dalybms.com/)下载；
④联系客服获取下载方式并安装手机APP。

(2)连接蓝牙APP

打开蓝牙和手机位置信息并进入APP，APP会自动搜索蓝牙序列号，核对保护板上的序列号无误后点击序列号进入电池管理界面。

3、设置参数

首次使用时，需在APP或电脑上位机设置电池类型及容量（出厂默认为铁锂参数），电池组的容量是需要按电池组的实际容量进行设置。

首次使用时需充满100%作为标定，其他保护参数可以根据自身需求进行设置，APP修改参数的出厂默认密码为123456，PC上位机修改参数密码为12345678。

*注：在没有充放电的状态下，保护板默认3600秒后休眠，检测到充放电时会自动唤醒。也可通过APP或PC上位机修改休眠时间，如设置65535则代表不休眠。

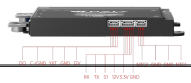
4、一线通使用说明

在APP或上位机选择对应协议，即可使用。

5、特别说明

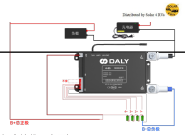
(1) 不同厂家的排线不通用，请确保使用我们公司配套排线；
(2) 在测试、安装、接触和使用保护板时，要做好防静电措施；
(3) 不要使保护板的散热面直接接触电芯，否则热量会传送到电芯，影响电池的安全；
(4) 不可自行拆卸、更改保护板元器件；
(5) 本公司保护板外壳仍会导电，组装作业中避免与电芯，镍带接触，因静电防护设计需要，外壳与主板共地，测量时有电压属正常现象；
(6) 我司产品进行严格的出厂检验测试，但是因为客户使用的环境不同（特别是在高温、超低温、太阳下、潮湿环境等），难免会出现保护板故障，所以客户在选择和使用保护板时，需要在友好的环境下使用，及选择一定冗余量的保护板进行备用。

三、接口定义说明

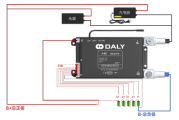


[DALY DL-R32U-F012S200ATJ-MM00-S4RV LiFePO4 BMS Technical Specifications]

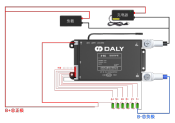
Detailed technical specifications, wiring diagrams, and warranty information for the DALY DL-R32U-F012S200ATJ-MM00-S4RV LiFePO4 12S 36V 200A Battery Management System (BMS) with Balance, UART, and Bluetooth.



(5串接线示意图)



(6串接线示意图)



东莞市达锂电子有限公司
DALY Dongguan DALY Electronics Co., Ltd.

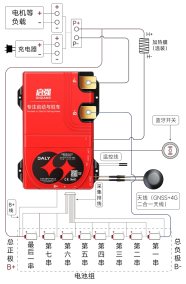
第五代卡车启动保护板 操作使用说明书

一、产品简介

随着锂电池的广泛应用，对电池管理系统也提出了高性能、高可靠性及高性价比等要求。

达锂第五代卡车启动保护板是专门针对货车、船舶启动和驻车空调及卡车启动电源电池组而研发设计的一款智能保护板，可承受 3000A 的瞬间大电流，内置加热模块可以直连加热膜，集成滤波模块吸收卡车电机脉冲高压，且具有一键强启，智能通讯等功能。集成 4G 远程通讯跟高精度北斗定位功能，可通过云平台、APP、小程序实现远程管理、查看实时定位、历史轨迹等智慧功能。

二、操作说明



* 请仔细阅读说明书，更改参数（如修改电池容量，电压，电流等）前请截图保存，方便后期原始数据。

1、保护板连接电池接线顺序：

特别注意：

- 不同厂家的排线不通用，请确保使用达锂配套排线；
  （注意：B- 线内阻在 0.5mR-0.8mR 范围）；
- 切记 !!! 焊接采样排线时，排线不要插入保护板；

1.1 排线从细黑线连接总负极 B- 开始连接，第 2 根线（红线）连接第 1 串电池正极，后面依次连接每一串电池的正极，直到最后一串总正极，B+ 线单独接入电池总正极；

1.2 排线连接好后插头不要直接插入保护板，先测量插头背面每两个相邻金属端子间的电压，如果是三元聚合物电池电压应该在 3.0-4.15V 之间，铁锂电池应该在 2.5-3.6V 之间，钛酸锂电池应该在1.8-2.8V 之间，确保电压无误后再进行下一 步操作 ；

1.3 插入NTC 线束（确保保护板NTC接口插入温控线）；

1.4 将保护板B-线(蓝色粗线)接到电池总负极；

1.5 将排线插入保护板；

1.6 将蓝牙开关模块插入UART接口，查看指示灯是否正常亮起（UART1、UART2 均可）。

1.7 首次上电需要充电、或蓝牙开关按键激活。

2、测量电池B+,B-电压与B+,P-电压是否相等(即：电池组本身电压和经过保护板之后的电压是否相等),相等即保护板正常工作，可以正常使用了。如不相等，请按照上面接线顺序重新检查一遍。

3、接负载和充电器：

3.1 将负载负极和充电器负极与P-连接。

3.2 将负载正极和充电器正极与电池组总正极连接。

4、下载通讯软件(手机端 DALY BMS APP,电脑端上位机)，设置电池组的容量(AH)为正确的容量。

4.1 在手机应用市场搜索DALY BMS,下载并安装。

4.2 打开手机的定位和蓝牙及相关权限功能。

4.3 打开DALY BMS APP 在首界面选择4G设备，注册并绑定设备。

4.4 在界面的右下角有参数设置，点击打开，选择电芯参数,可以看到额定容量，输入自己电池组的实际容量XX, 点击设置，默认密码123456。

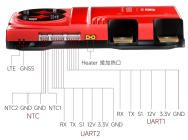
4.5 容量设置好，可以对电池组进行充电，充电触发了过充二级保护，SOC会自动校准为100%。

5、天线安装

特别注意：

- 外置天线切勿放置于密闭箱体内，需要将天线外置，注意固定安装，且防水点胶；
- 5.1 箱体合适位置开孔，开孔建议13-13.5 mm，最终需结合天线实物判断。

三、接口定义说明



序号	功能	Pin数	间距	接口描述	工艺方式
1	电压采集1	9	2.0	B0-B8	插件带扣
2	电压采集2	11	2.0	B0-B10	插件带扣
3	NTC	4	2.0	NTC1,GND,GND,NTC2	插件带扣
4	B+	2	/	B+	XT-30
5	H-	2	/	接加热口	XT-30
6	UART1	6	2.0	GND,3.3V,12V,S1,TX,RX	插件带扣
7	UART2	6	2.0	GND,3.3V,12V,S1,TX,RX	插件带扣
8	LTE	1	/	4G通讯天线	MCX直母头
9	GNSS	1	/	北斗定位天线	MCX直公头

四、远程管理、蓝牙开关模块使用说明

1、小程序/DALY APP远程管理

（1）"启动宝"小程序远程管理

*"启动宝"微信小程序功能：可进行数据监控、一键强启、一键加热、预约加热、实时定位、历史轨迹等功能。

*连接方式一：通过扫描随货二维码，快速连接"启动宝"微信小程序，选择"远程设备"，注册绑定后即可连接保护板实现远程管理。

[DALY LiFePO4 8S24V200A BMS with 4G and GNSS - Datasheet]

Technical datasheet for the DALY LiFePO4 8S24V200A Battery Management System (BMS) featuring 4G connectivity, GNSS, UART, and NTC temperature sensing. Includes specifications, pinout, and LED status information.

产品规格书 Product specification 锂电池主动均衡保护板 Lithium battery active balancing protection board JK BD4A24S 4P 版本：15.5.3 成都极空科技有限公司 Chengdu JKong Technology Co.LTD	[JK-BD4A24S-4P Lithium Battery Active Balancing Protection Board User Manual] Detailed user and maintenance manual for the JK-BD4A24S-4P Lithium Battery Active Balancing Protection Board by Chengdu Jikong Technology Co., LTD. Covers product overview, features, selection guide, functions, parameters, interface definition, installation, and APP operation.

	[JK Smart Active Balance BMS User Manual and Specifications] This document provides a comprehensive user manual and technical specifications for the JK Smart Active Balance BMS, covering installation, operation, troubleshooting, and product details for various models.